REMARKS

This paper responds to the Office action mailed March 13, 2003 with reference to US application of Bevan, serial no. 09/385,938. Claims 1, 2 and 5 to 13 are pending in the application.

Applicant's arguments filed December 2002 are discussed by the Examiner in the Office action in the section headed Response to Arguments. The Examiner indicates that sections of Wolf indicate how phase modulation is used to determine if an intact clock path exists, and that these sections indicate a full disclosure of 'synchronization trail information'. Reconsideration is urged.

Wolf teaches that information about a prior designated clock path is obtained by physical testing of network nodes in that clock path. From the results of the physical tests deductions are made about the functioning of the clock path, possibly resulting in further physical testing on network nodes in the clock path. In Wolf, if the physical tests show that the designated clock path is not functioning, exhaustive further testing has to be carried out as described at col 4, lines 30 to 48 of Wolf. It is submitted that this process of physical testing, deductions made from such physical testing, possibly resulting in further physical testing is a different approach to 'computing synchronization trail information for network elements from said synchronization data and said connectivity data'. The process of physical testing, deductions made therefrom, and further testing is not a computation from collected data. The present invention enables synchronization trail information to be computed from collected classes of data and so enables the automation of the establishment of synchronization trail information.

The Examiner indicates that Wolf provides full disclosure of 'synchronization trail information' and characterizes this information as the clock path and information about that path. However, the testing method taught in Wolf requires prior

knowledge of a designated clock path, so that a designated clock path, for example that shown in Figure 1a can be end-to-end tested. Wolf in no way describes how this prior knowledge of the clock path is obtained and so cannot provide a full disclosure of 'synchronization trail information'.

Claim 1 of the present application describes a method, the first step of which is obtaining network element synchronization data. Examples of such data are described in the present application for example, at page 7, lines 15 to 20, page 9, line 14 and at page 12, lines 19 to 27. Such data is not obtained in relation to the network elements in Wolf for any purpose and so is not obtained for computing synchronization trail information. Instead, in Wolf a marked signal is passed along a designated clock path and one or more selected network elements in the clock path are checked to see if they carry the marked signal in order to deduce information about the functioning of the designated clock path. The second step in the method of claim 1 is obtaining network element connectivity data. Examples of such data are described in the present application for example, at page 6, lines 5 to 14, page 7, lines 22 to 25 and page 9, lines 16 to 18. Such data is not obtained in relation to the network elements in Wolf. In Wolf, by some means not disclosed, a designated clock path to be tested is already identified. Wolf does not describe these classes of data. Consequently, Wolf does not disclose a computation of synchronization trail information from such data.

The above arguments in relation to claim 1 of the present application apply equally to independent claims 5, 6 and 13.

The applicant also relies on the arguments filed 12/12/02 in relation to claim 2. Applicant maintains that Wolf does not teach a data representation of a physical resource (see page 1, lines 10 to 13) operating in accordance with a protocol having a plurality of layers, in which the representation comprises a timing layer representing synchronization trail information.

Claims 1-5, 7 and 13 stand rejected under 35 USC S 102(e) as being anticipated by Wolf (US 6,081,550). These rejections are respectfully traversed.

In relation to claim 1, as set out above, Wolf does not describe the steps of obtaining network element synchronization data or of obtaining network element connectivity data. In Wolf a prior knowledge of a designated clock path is assumed, but it is nowhere taught in Wolf how this prior knowledge is gained. As set out above Wolf does not describe a computation of synchronization trail information from such data, it only describes physical testing based on an already known clock path and the making of deductions based on the results of the tests, possibly leading to further such physical tests. The making of these physical tests and the deductions made from the tests and the possible further tests to be applied are described in Wolf from col 3, line 12 to col 5, line 4 in relation to Figures 1a to 1d of Wolf.

Accordingly, it is submitted that claim 1 of the present application is not anticipated by Wolf. It is also submitted, given the above arguments, that the teaching in Wolf does not in any way make claim 1 of the present application obvious.

In relation to claim 2, Wolf does describe an SDH system. However, this does not imply a timing layer representing synchronization trail information.

Accordingly, it is submitted that claim 2 of the present application is not anticipated by Wolf.

Claims 3 and 4 were deleted by the applicant without prejudice in the response filed December 12, 2002.

In relation to claims 5, 6 and 13, the arguments set out in relation to claim 1 above apply.

Claims 7 to 12 are dependent on claim 1 and so it is submitted that they are not anticipated by Wolf.

Referring the Examiner's argument on claim 7, in relation to Figure 1a at col 3, lines 39-44 one example of the physical test taught by Wolf is described. The reference clock of a first network element NE1 is marked and this mark is detected at a network element NE8, after the marked signal has passed sequentially from NE1 to NE8. However, it is the starting network element NE1 which is adjacent to the synchronization source (PRC) in Figure 1a of Wolf. So in Wolf the marked signal is passed away from and not to the synchronization source. According to claim 7, a synchronization trail is followed to its synchronization source. In any case, the passing of the marked signal from NE1 to NE8 is not in any way equivalent to 'following the synchronization trail.....using said synchronization data and said connectivity data'. As argued above, Wolf does not disclose the obtaining of such data or its use in relation to computing or following synchronization trails.

Claims 6, 11 and 12 stand rejected under 35 USC S 103(a) as being unpatentable over Wolf (US 6,081,550) in view of French et al (US 6,330,601). These rejections are respectfully traversed.

In relation to claim 6, as argued above, it is submitted that Wolf does not teach or disclose the obtaining of network element synchronization data, the obtaining of network element connectivity data, the computation of synchronization trail information from said data or the following of the trail to the synchronization source of a network element. French relates to a management system for a multi-level communication network which is described as having a graphical user interface (GUI). The graphical user interface can present necessary information to an operator on a display device for viewing information about networks. However, the main aspect taught by French is an interface module permitting a first network level

management system to represent at least two logical levels of a multi-level communication system. The synchronization manager (340) referred to in French is for synchronizing data between the Management Information Bases (MIBs) (See col 6, line 53 to col 7, line 5). French does not relate to synchronization trails. Given the above, the combined teaching of Wolf and French would not lead a person skilled in the art towards the present invention as claimed in claim 6.

In relation to claims 11 and 12, these claims are dependent on claim 1 and based on the arguments above it is submitted that neither Wolf or French separately or in combination teach the feature of claim 1.

Accordingly, it is submitted that claims 6, 11 and 12 are patentable over Wolf in view of French.

Claims 8 -10 stand rejected under 35 USC §103(a) as being unpatentable over Wolf (US 6,081,550) in view of Meier (US 6,400,702). These rejections are respectfully traversed.

Meier relates to the organization of base stations in a radio data communications system into an optimal spanning tree network so as to control routing. It does not relate to synchronization trail information.

Firstly, claims 8 to 10 are dependent on claim 1 and it is submitted that based on arguments above claim 1 is patentable over Wolf and Meier either separately or in combination.

In relation to claim 9, when applying the physical test taught in Wolf to a designated clock path, the clock path along which the marked signal is to be sent is already known. There is no discussion in Wolf of the tagging of network elements via which the marked signal is passed. In the use of the ad hoc tests taught in Wolf according

to the process of testing, deductions and possible further testing, there is no reason to tag network elements via which a marked signal has passed. The Examiner's statement that it is implied in Wolf that the elements in the network are tagged and kept track of when the trail is being traced and that it is implied that tags are discarded after a count, is strongly refuted.

In relation to claim 8, Meier describes an initialization process in an RF data communication system in which nodes are organized into an optimal spanning tree rooted at a gateway (col 6, lines 6 to 8). The gateway is called a root node (col 6, lines 11 to 13). The gateway node periodically sends a polling packet referred to as a 'hello' packet. The hello packets do not include or relate in any way to trail synchronization (see col 6, lines 25 to 28). The sending of the hello packets enables the root node to determine which nodes are attached to the spanning tree (col 6, lines 36 to 38). Meier in no way relates to synchronization trail information. The Examiner indicates that Meier teaches starting such trails at leafNode elements. Meier does not mention leafNodes or anything like them. The 'hello' packets are not preferentially sent out to nodes at the edge of the spanning tree (which might be considered equivalent to leafNodes) but to all nodes in the spanning tree. Accordingly, Meier in no way describes or teaches preferentially selecting leafNode network elements as a start of a synchronization trail.

In relation to claim 10, Meier describes the measurement of the distance of nodes in the spanning tree from the root node as being measured in hops times (ie. multiplied by) the bandwidth of each hop (see col 6, lines 31 to 33). This distance measurement in Meier does not relate to synchronization trail information and in any case is different from the feature of claim 10 of the present invention in which the number of hops from a network element at the start of a synchronization trail to a primary reference clock are simply counted.

Accordingly, it is submitted that claims 8 - 10 are patentable over Wolf in view of Meier.

Given the above, it is submitted that the present application is in condition for allowance, and such action is solicited.

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Respectfully submitted,

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